Niagara Falls A. L. A. Conference Number.

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Natural Science. London, 1892–99. Vols. 1–15, all published. Very scarce, complete . 40.00
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Sidereal Messenger, followed by Astronomy and Astrophysics. 1882–94. Vols. 1–13 complete, 3 vols. bound, rest unbound . . 55.00

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American Kitchen Magazine. Boston. Vols. 1–16, no. 4, to Jan. 1902. 16 vols., unbound 15.00

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Archæological Review. 1888–90. 4 vols., all published, cloth and unbound . . . 8.00
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Cassier's Magazine. 1895–1902. Vols. 9–22. 14 vols., unbound 14.00
The late portion of this important engineering periodical.

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This is entirely different from *Charities Review*, which has now been merged in *Charities*. Now indexed in Poole.

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Contemporary Review. London edition, as in Poole. Vols. 19–38 various bindings, 39–71 (to 1897). In all 53 volumes . . . 40.00

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Geographical Magazine. 1874–78. 5 vols., bound. Poole 15.00

Globe. Phila., 1889–98. Vols. 1–8, unbound 6.00
A Catholic quarterly, of rather radical tendencies.

Harper's Bazar. Vols. 1–33, no. 17, 1867–1900. 19 vols. bound, rest unbound . . 26.00

Home and Foreign Review. London, 1862–64. 4 vols., all published 12.00
It is a good plan to secure these small Poole sets before they disappear from the market.

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International Monthly. Burlington, Vt., 1900–1902. 5 vols., complete . . . 7.75
This is a Poole set, which will soon rise in price. A valuable general review.

Journal of Speculative Philosophy. St. Louis, 1867–93. 22 vols., all published, unbound 38.00

Knight Errant. Boston, nos. 1–4, 1892–92. 4 nos., all published, quarto, illustrated . 4.00

Macmillan's Magazine. London. Vols. 1–24, full linen canvas binding 35.00

(For continuation see page 96.)

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Bulletin of Bibliography

Vol. 3 JULY, 1903. No. 6

This Bulletin is published, primarily, as a means of communication between The Boston Book Company and its customers. A constant endeavor will be made, however, to include in each issue enough original matter of sufficient value to induce librarians to preserve and bind up the numbers. Each volume will be provided with a title-page and an index.

No subscription price will be put upon the journal, and numbers will not be sold. It will be sent to a selected list of libraries, customers or likely to become customers of The Boston Book Company. The circulation of The Bulletin will be increased in proportion to the interest shown in it, and in the special work of the Library Department of The Boston Book Company. Correspondence is solicited, and should be addressed,

The Boston Book Company,
83-91 Francis St., Back Bay, Boston, Mass.

EDITORIAL COMMENT.

This number of the BULLETIN goes out as the Niagara Falls A. L. A. Conference issue, and we think our allotment of so much space to Miss Clark's bibliography of Niagara Falls will be justified at this time. We omit until the next number our quarterly index to Reference Lists published in Library Bulletins, as the date of going to press with this number is a month earlier than usual. We also postpone the promised list of "Periodicals which issue no title or index."

We call especial attention to our advertising pages. A very unusual collection of sets is offered, and at prices in most cases below those recently made by others—and *our sets* are always collated.

You will pardon us if we say also that we have just secured two large public library orders, and this after the libraries giving them had tried to better our price on the sets desired. Libraries may feel sure of getting better satisfaction, and more reasonable terms from us, than from any other dealer, especially if condition of sets bought counts for anything in the estimates received.

In summer periodical sets are the best books to buy, they are so easily catalogued—a set is no more trouble than a single miscellaneous book.

NIAGARA FALLS.

A PARTIAL BIBLIOGRAPHY

BY EDITH CLARK,
University of Illinois Library School, 1902.

PREFACE.

At the foot of the main thoroughfare in the town of Niagara, at a point on the edge of the gorge about midway between the American Falls and the new steel bridge, is shown the spot where the first white man obtained a view of the majestic falls of Niagara. That was more than two centuries ago, and Father Hennepin was so impressed with what he saw that in his book "Louisiana," published in 1683, he gave the height of the falls as being over three times as great as it actually is, putting it down as 500 feet. Its actual height is 167 feet. Father Hennepin was the first of a host of word painters who have attempted and failed to portray this surpassing sight. Numerous investigations since Father Hennepin's day have shown us Niagara as it really is. The Niagara Falls are situated on the river of that name and about midway between Lake Erie and Lake Ontario. The river, which is about 33 miles in length, flows in a general northerly direction, and in that distance it has a total fall of 326 feet, almost the whole of which occurs in the last 17 miles of its course.

The American Falls are 1,060 feet in width with a vertical fall of 167 feet, while the Canadian Falls have a total width of 3,010 feet and a vertical height of 158 feet. The total fall available for power purposes from the commencement of the upper rapids, where the power companies have their intakes, to the river immediately below the Falls, is 216 feet, and this shows the theoretical horse power of the falls to be about 6,750,000. If we include the additional fall of 100 feet from the foot of the Falls to Lewiston, 8 miles below, it is found that the theoretical possibilities of Niagara must be put down at 10,000,000 horse power.

Ever since the year 1725, when a small saw-mill was erected at the Falls, their vast store of energy has appealed to the mechanical instincts of man and has invited his co-operation; but it is only of late years that any serious attempt has been made to utilize this energy on a large scale.

Early in 1886 a charter was obtained from the New York Legislature by several citizens of Niagara Falls, which had for its object the further development of the water power.

The first formal plan upon which the future work was based was published on July 1st of that year, at which time about 10,000 horse power was being used by the small mills situated on the bluff below the falls and receiving their supply of water through a thirty-five foot canal nearly a mile long which looped around the cataract.

Instead of carrying the water below the Falls, the new plans proposed its utilization above them, for which undertaking it required three years for the promotors to convince capitalists that the undertaking would be a commercial success.

In 1889 the Cataract Construction Company was formed for the purpose of making investigations as to the best means of transformation and transmission. After a few years the Niagara Falls Power Company was formed; and by far the largest power plant in the world, having a total capacity of 40,000 horse power, was located about a mile above the American Falls.

This is the result of all the planning and designing, the financiering and legislative deliberation; this is the central source from which the hundred new industries attracted to a new manufacturing center obtain their power, and upon which

Buffalo, fifteen miles away, depends for the operation of many of its street railways and mills.

Next in importance is the Niagara Falls Hydraulic Power Company, the installation of whose plant took place in 1896. It is reorganized as one of the recent great works in the city, so rich in power facilities and development. The present installation represents a capacity of 20,000 horse power, a portion of which operates a trolley road fifteen miles distant from the power station.

One of the largest contractors for Niagara power is the Buffalo General Electric Company, which does a general electrical distribution business in that city.

A row of factories, operated by electricity, extends along the river front. The Carborundum Company, the Union Carbide Company, the Mathieson Alkali Company, and many others here utilize the electrical energy in immense quantities and are able to produce many materials at a price otherwise impossible.

One or two other power-houses are in operation near the Falls. Much power will, furthermore, undoubtedly be used on the Canadian shore, so that we are steadily controlling and gradually making use of the enormous power which for ages has been going to waste at Niagara. One of the boldest engineering and commercial feats of the past century, the successful development of the water power of Niagara Falls, was the signal for the utilization of water powers all over the world.

This masterpiece of nature remains today with its beauty and grandeur unmarred, its 8,000,000 horse power inappreciably affected by the petty thefts of man, and its usefulness enhanced a thousand-fold.

EXPLANATIONS.

All material on the subject is not exhausted, but I think that I may safely say that all of the best material in the Library of the University of Illinois, the Champaign Public Library, the John Crerar Library, and the Public Library at Chicago has been included.

The most advanced thought concerning both the geologic and engineering sides of Niagara has not found expression in books, but is almost entirely in periodical literature.

References to periodicals are made in the same form as is used in Poole's Index to Periodical Literature, volume and page number being separated by a colon; *e. g.*, 4:325 means volume 4, page 325.

EDITH CLARK.

PERIODICALS REFERRED TO.

American Electrician	Am. Elect'n
American Journal of Science	Am. J. Sci.
American Machinist	Am. Mach.
American Naturalist	Am. Natural.
American Society of Civil Engineers	Am. Soc. C. E.
Atlantic Monthly	Atlan.
Blackwood	Blackw.
Cassier's Magazine	Cassier
Century	Cent.
Chautauquan	Chaut.
Contemporary Review	Contemp.
Cosmopolitan	Cosmopol.
Eclectic Magazine	Ecl. M.
Electrical Engineering	Elec. Eng.
Electrical Review	Elec. Rev.
Electrical World	Elec. Wld.
Engineering	Engn'g
Engineering Magazine	Eng. Mag.
Engineering News	Eng. News
Engineering Record	Eng. Rec.
Harper's Monthly Magazine	Harper
Harper's Weekly	Harp. W.
Journal of the Franklin Institute	J. Frankl. Inst.
Littell's Living Age	Liv. Age
McClure	McClure
Munsey	Munsey
Nation	Nation
Nature	Nature
Nineteenth Century	19th Cent.
Outlook	Outl.
Popular Science Monthly	Pop. Sci. Mo.
Power	Power
Proceedings of the Engineers' Club of Philadelphia	Pro. Engs. Club of Phil.
Public Opinion	Pub. Opin.
Railroad Gazette	R. R. Gaz.
Review of Reviews	R. of R's.
Science	Science
Scientific American	Sci. Am.
Scientific American Supplement	Sci. Am. Sup.
Scribner	Scrib.
Street Railway Review	St. Ry. Rev.
Street Railway Journal	St. Ry. Jour.
Western Electrician	W. Elect.
Zeitschrift des Vereines deutscher Ingenieure	Zeitschr. d. Ver. Deutscher Ing.

DESCRIPTION.

1. (THE) attempt to save Niagara. (Cent. April, 1885. 7:954-5.)

   A brief article in which it is stated that the Niagara Falls commissioners recommend the purchase of the Niagara Falls lands by the state, and the establishment of a state reservation as the only means of preserving the scenery of Niagara.

2. BADEKER, Karl. The United States, with an excursion into Mexico. (199-206.)

   A good description, guide, and map of Niagara Falls.

3. BIGELOW, Timothy. Tour to Niagara Falls in 1805. (Bost. 1876, Wilson.)

   Extracts from a journal giving very interesting descriptions of the natural curiosities of Niagara and the immediate vicinity.

4. DUNLAP, O. E. Niagara in winter. (Cosmopol. April, 1900. 28:593-604, illus.)

   Niagara as a winter resort, together with a splendid description of the wonderful ice formations there.

5. DUNLAP, O. E. Niagara model for the electrical exposition. (W. Elec. April 18, 1896. 18:178-82, illus.)

   A description of a beautiful model of Niagara in miniature, which was exhibited at the electrical exposition held in New York.

6. DUNLAP, O. E. Water supply of Niagara. (W. Elec. Feb. 8, 1896. 18:63, illus.)

   Considering the danger of drawing off so much water for power purposes as to ruin the beauty of the cataract.

7. FEATURES of the Falls. (St. Ry. Rev. Oct. 1897. 7:644-46, illus.)

   A description of the Falls, with suggestions as to the best course to pursue in viewing them.

8. FERRELL, J. W. The falls of Niagara and scenes around them. (1876. A. S. Barnes & Co.)

   A popular description of all the natural phenomena which constitute Niagara.

9. HERBERTSON, A. J. The history of the Great Lakes and Niagara. (Sci. Am. Sup. Nov. 1896. 42:17398.)

   An interesting contribution to the history of the formation of the great American lakes and of Niagara Falls. A popular presentation of the subject.

10. HOWELLS, W. D., and others. Niagara book. (1901. N. Y Doubleday.)

    A comprehensive book, giving the history, geology, and description of Niagara Falls and the latest information concerning the utilization of Niagara power.

11. JAMES, H. Portraits of places. (364-76.)

    A chapter devoted to the scenery of Niagara.

12. JOHNSON, F. H. Guide to the Niagara Falls. (Phila., 1869. Ashmead.)

    An old-time guide to all points of interest, both on the American and Canadian side of the Falls. Contains also a brief history of the geology and recession of the Falls by Sir Charles Lyell.

13. MAUDE, John. Visit to the Falls of Niagara in 1900. (Lond. 1826. Longman.)

    A copy of a daily journal kept by an Englishman during his visit at Niagara. A very good description of each of the attractions of Niagara.

14. (The) MUSIC of Niagara. (Scrib. Feb. 1881. 21:583-86.)

    An attempt to prove a parallelism between the formation of musical tones in organ pipes of definite extent and the formation of musical tones in the sheets of water of Niagara Falls.

15. (The) MUSIC of Niagara. (Scrib. June, 1881. 22:307-8.)

    Letters in which questions concerning a fuller meaning of Mr. Thayer's article on "The music of Niagara" in Scribner for February, 1881, are asked and answered.

16. (The) NEW railroad bridge at Niagara. (R. R. Gaz. April 24, 1896. 28: 281–2.)

An excellent description of steel arch to replace the old suspension railroad bridge. Contains brief general specification of material, erection, and loading.

17. NIAGARA. (Harper, Aug. 1853. 7: 289–305, illus.)

A quite lengthy description of Niagara from both American and Canadian shores, with the wonderful difference in scenery in summer and winter.

18. NIAGARA. (Nation, Oct. 12, 1871. 13: 238–39 and 254–55.)

A popular description of Niagara written by a traveller who gives us his various impressions of the Falls as viewed from different prominent points.

19. NIAGARA as an industrial center. (Sci. Am. May 27, 1899. 80: 343–44, illus.)

The first of a series of articles descriptive of the topographical and engineering features.

20. NIAGARA Falls industrial number. (Sci. Am. Sup. Mar. 3, 1900. 49: 20207–20220, illus.)

A comprehensive, interesting, and fully illustrated account of the history, geology, fine bridges, and power plants, with much information concerning the utilization of the energy. One of the most complete, recent sources of information.

21. (The) NIAGARA railway arch. (Eng. Mag. June, 1898. 15: 475–6.)

A good description of the new steel arch bridge over the gorge at Niagara in comparison with the old.

22. (The) NIAGARA railway suspension bridge. (Engn'g. Dec. 9, 1887. 44: 595–98, illus.)

A popular account of the building of the new Niagara suspension bridge.

23. NOTES on Niagara. (Chic. 1883. Lespinasse.)

Short descriptions of the numerous attractions of Niagara by various prominent authors.

24. TYNDALL, John. Some observations on Niagara. (Pop. Sci. Mo. June, 1873. 3: 210–26.)

A most interesting description of the beauties of Niagara; together with some discussions as to the causes of the many strange phenomena existing there. A short history of the geological changes is also involved in this article.

25. VAN RENSSELAER, Mrs. Schuyler. Niagara. (Cent. June, 1899. N. S. 36: 184–202, illus.)

A splendid description of the many beauties of Niagara and the best course to follow in visiting this resort.

GEOLOGY.

26. (The) AGE of Niagara. (Pub. Opin. Oct. 1896. 21: 560.)

A brief article showing Dr. Spencer's estimate of the age of Niagara Falls and river to be about 32,000 years.

27. (The) AGE of Niagara Falls. (Nature, Nov. 1898. 59: 16.)

As a result of close investigations made by Professor Frederick Wright, he reports that the erosion at the mouth of the gorge shows the age of the Falls to be something less than 10,000 years.

28. BUCK, L. L. A few remarks about the Niagara gorge. (Am. Soc. C. E. Aug. 1894. 32: 205–208, illus.)

A geological description of Niagara gorge. An excellent map of the gorge accompanies the description.

29. DISCUSSION on the Niagara gorge. (Am. Soc. C. E. Aug. 1894. 32: 208–13.)

An informal discussion as to the length of time in which the Niagara gorge could have been eroded by the action of the falls. The opinions of prominent geologists are cited as authorities.

30. DUNLAP, O. E. Foolhardy attempts at passing the whirlpool rapids at Niagara. (Sci. Am. Sept. 28, 1901. 85: 201–2, illus.)

A description of Peter Nissen's "Fool Killer" in bottom of the river. He expected to go much closer the great horse-shoe fall than any human being had yet approached, and below the point where it breaks over the shelving precipice he hoped to sound the bottom.

31. (The) "FOOL KILLER" taking soundings. (Sci. Am. Oct. 5, 1901. 85: 211.)

Nissen began making soundings Sept. 21, 1901. He found the rocky bottom of the river very uneven, at a depth varying from fifteen to one hundred feet.

32. GARBETT, E. L. Recession of Niagara Falls in 133 years. (Nature, July 16, 1885. 32: 244–45.)

A refutation of Mr. Lyell's statement that Niagara gorge had been enlarged one hundred acres in 133 years and had had miles of its bed deepened many feet.

33. GUNNING, W. D. The past and future of Niagara. (Pop. Sci. Mo. 1872. 1: 564–73.)

A brief description and historical sketch of Niagara with its geological changes from 1842–72.

34. HARTT, M. B. The passing of Niagara. (Outl. May, 1901. 68: 21–28.)

A protest against the many commercial powers and interests which are drawing off the waters of Niagara Falls.

35. (The) LIFE history of Niagara. (Engn'g. Mar. 22, 1889. 47: 269–71, illus.)

A geological history of Niagara in which the theory is advanced that Niagara is post-glacial only below the whirlpool; that the upper portion is pre-glacial and falls have existed in it from very remote times.

36. NIAGARA. (Scrib. Aug. 1876. 12: 462–78.)

Quite a full description of the Niagara of twenty-five years ago; together with the local history of the place.

37. (The) RETROCESSION of Niagara Falls. (Eng. News, Dec. 15, 1888. 20: 462.)

An extract from a paper by Prof. Julius Pohlman, in which he concludes that in consideration of the geological age of Niagara the age of the human race must be between forty and sixty thousand years.

38. SPENCER, J. W. Another episode in the history of Niagara Falls. (Am. J. Sci. 1898. 156: 438–50, illus.)

A good geological history of Niagara Falls and River, giving a revision of the various episodes and explaining the modern episodes.

39. SPENCER, J. W. The duration of Niagara Falls. (Am. J. Sci. 1894. 148: 455–72.)

The first computation upon the age of the Falls, as based upon the changing episodes of the river. The data upon which the computations were made embraced not only the modern rate of recession of the Falls, but also recent discoveries.

40. SPENCER, J. W. The duration of Niagara Falls. (Am. Natural. Oct. 1894. 28: 859–62.)

A physical study setting forth the changing episodes in the history of the Falls, computing the age of the river, and giving suggestions as to the antiquity of man.

41. SPENCER, J. W. Niagara as a timepiece. (Pop. Sci. Mo. May, 1896. 49: 1–19, illus.)

An excellent sketch of the early geological history of Niagara Falls.

42. UPHAM, Warren. The age of Niagara Falls as indicated by the erosion at the mouth of the gorge. (Science, Oct. 1898. N. S. 8: 502.)

An estimate of the age of Niagara Falls, as made by Professor G. F. Wright of Oberlin, in which he says that the age of the gorge cannot be much more than 10,000 years.

43. WRIGHT, G. F. New method of estimating the age of Niagara Falls. (Pop. Sci. Mo. June, 1899. 55: 145–54, illus.)

The new evidence lies in the extent of the enlargement of the mouth of the Niagara gorge at Lewiston, since the recession of the falls began.

HISTORY.

44. CHANGING name of Suspension Bridge to Niagara Falls. (U. S. Cong. 55, sess. 2, House Rep't. V. 3, no. 600.)

A mere statement of the fact that in 1898 Suspension Bridge was incorporated with Niagara Falls into the city of Niagara Falls, and that the former post-offices of Suspension Bridge and Niagara Falls were united into one post-office under the name of Niagara Falls post-office.

45. DUNLAP, O. E. Conveying the roar of Niagara by telephone to New York. (W. Elec. May 30, 1896. 27: 265, illus.)

A brief statement of the process by which the roar of Niagara Falls was transmitted to the electrical exposition in New York by telephone.

46. DUNLAP, O. E. Old Hydraulic Canal plant at Niagara Falls transformed for electrical transmission. (W. Elec. Dec. 5, 1896. 19:273-74, illus.)

An account of the changes and improvements made in the canal property since it came into the possession of the Niagara Falls Hydraulic Power and Mfg. Co. during the construction of the new power house and plant at the water's edge in Niagara gorge.

47. EARLY history of the falls and city. (St. Ry. Rev. Oct. 1897 7:634-36, illus.)

A few facts and incidents connected with the early history of Niagara given in a most interesting and popular way.

48. (The) LIFE history of Niagara. (Engn'g. Mar. 22, 1889. 47:269-71, illus.)

A summary of Mr. Pohlman's theory that the gorge of Niagara is post-glacial only below the whirlpool and that the upper portion of the river is pre-glacial and falls have existed in it from remote times. These falls were the parents of the present cataract.

49. NIAGARA. (New York State-Engineer and Surveyor Annual report. 1890. 29-30.)

A very brief account of the surveys of the crest of the Falls of Niagara, together with a table showing the recession of the falls.

50. NIAGARA Falls ship-canal. (U. S. Cong. 43, sess. 2, House mis. doc. V. 3, no. 153.)

Resolution of the legislature of Wisconsin, asking for a ship-canal around the falls of Niagara.

51. (The) NIAGARA Reservation. (Critic, Mar. 11, 1896. 28:203.)

A protest against the proposed disfigurement of the beautiful site of Niagara.

52. (The) PRESERVATION of Niagara Falls. (Nation, Sept. 1, 1881. 33:170-71.)

A strong protest against the destruction of the beauty of the scenery at Niagara and an appeal to the state to preserve this natural treasure.

53. PUBLIC building at Suspension Bridge. (U. S. Cong. 52, sess. 1, House Rep't. V. 4, no. 1115.)

A statement of the conditions at Suspension Bridge and Niagara Falls; and a recommendation that a new government building be erected at Suspension Bridge and that the words "Niagara Falls" be substituted for the words "Suspension Bridge" in the title and first line of the bill, since the two towns have been incorporated under the name "Niagara Falls."

54. ROEB, J. H. Buying Niagara. (19th Cent. Dec. 1886. 20:815-23.)

Story of the movement to preserve Niagara, which movement resulted in the purchase of Niagara Falls by the state of New York in 1885. This movement was another instance of the power of mere sentiment among men and has preserved, not only for New York and the United States, but for the world at large, the rare beauties of Niagara.

55. SHIP canal around the falls of Niagara. (U. S. Cong. 51, sess. 1, House Rep't. V. 5, no. 1430.)

Reports favoring the construction of the Niagara ship canal; these reports contain valuable statistics concerning the agricultural and commercial interests of the country, as aided by the building of this canal.

NIAGARA FALLS POWER.

56. ABBOTT, A. V. Industrial Niagara. (R. of R's. Sept. 1895. 12:295-99, illus.)

A description of the Niagara Falls power house, together with a short discussion of the utilization of power for industrial purposes at Niagara.

57. ANDREWS, W. C. How Niagara has been harnessed. (R. of R's. June, 1901. 23:694-97.)

A technical description of the mechanical changes in the transportation and transmission of power from Niagara in the last ten years.

58. (The) APPLICATION of Niagara power to the work of the International Traction Company. (St. Ry. Jour. Feb. 3, 1900. 16:103-9, illus.)

Sketches briefly the development of the generating plant and the transmission line, and gives detailed description of the machinery of the traction system.

59. (The) BIRKINBINE plan for utilizing Niagara gorge power. (Elec. Eng. N. Y. Feb. 9, 1899.)

Brief description of the plan proposed; a plan to utilize five per cent of the water of the Gorge and Whirlpool Rapids at Niagara and convert it into 35,000 electrical horse power with an outlay of $2,000,000.

60. BLANCHARD, F. L. Niagara power at Buffalo. (Harp. W. June 5, 1897. 41:569-70, illus.)

A discussion of the possibility of compelling the falls of Niagara to furnish the city of Buffalo with light, heat, and power.

61. (The) BUFFALO-NIAGARA Power celebration. (Elec. Eng. Jan. 20, 1897. 23:85-87.)

An account of the banquet given Jan. 12, 1897, in celebration of the successful power transmission.

62. (The) CATARACT Power Company's transmission plant. (Elec. Wld. July 2, 1898. 32:3-4, illus.)

Describes a plant for furnishing electric light and power on a large scale at any point on the line from St. Catharine's to Hamilton, Ontario.

63. CAZIN, F. M. F. Niagara power. (Elec. Wld. July 17, 1897. 30:72-74, illus.)

The purpose of this paper is to discuss the features of power absorption from the falling waters as actually practiced, and to indicate a line for improved methods and machinery.

64. CHANGES in the Buffalo-Niagara Falls Power transmission line. (St. Ry. Jour. Dec. 1897. 13:860.)

A brief account of the changes made in the power transmission line in order to satisfy the increased demand for power from Buffalo.

65. DUNLAP, O. E. Developing power of lower Niagara. (W. Elec. June 18, 1898. 22:360, illus.)

Five suggested plans for the development of the rapids of the lower Niagara.

66. DUNLAP, O. E. Electric heaters in the great Niagara power house. (Elec. Eng. April 14, 1897. 23:396-97, illus.)

Description of the process by which the huge power house at Niagara is so successfully and entirely heated by electricity.

67. DUNLAP, O. E. Electric power transmission of Niagara. (W. Elec. Feb. 8, 1896. 18:61-62, illus.)

A popular and excellent account of the rapid progress in the power development.

68. DUNLAP, O. E. Electrical matters at Niagara Falls. (Elec. Wld. Jan. 4, 1897. 27:8-9.)

A few statements in reference to the extent to which cheap electrical power at Niagara has furnished an incentive to manufacture some things never before produced in the United States.

69. DUNLAP, O. E. Extension of the Niagara power house. (Elec. Eng. Sept. 16, 1896. 22:269-71, illus.)

Views and drawings illustrate the scene of the wheel-pit and power house extension, and make clear the changes which were made at that time.

70. DUNLAP, O. E. Lord Kelvin and the Niagara power transmission. (Elec. Eng. Aug. 26, 1897.)

An account of an interview on the occasion of Lord Kelvin's recent visit. Lord Kelvin was a past president of the British Association for the Advancement of Science, also president of the International Niagara Commission, established in London, 1890, for the purpose of developing Niagara.

71. DUNLAP, O. E. Making sodium peroxide at Niagara. (Elec. Eng. June 23, 1897. 23:701, illus.)

Describes the electrical equipment of the Niagara Electro-chemical Company.

72. DUNLAP, O. E. (The) manufacture of chemicals by Niagara power. (Elec. Eng. Sept. 9, 1896. 22:248-49, illus.)

Description of plant and processes of the Chemical Construction Company.

73. DUNLAP, O. E. New power developments at Niagara Falls. (Cassier, Mar. 1896. 9:484-87, illus.)

A popular account of the building of the new power house, and the relative position and use of the penstocks, turbines, and water wheels.

74. DUNLAP, O. E. New wheel-pit of the Niagara Falls Power Co.'s power plant at Niagara Falls, N. Y. (Eng. News, Apr. 5, 1900. 43: 229-30, illus.)

A technical description of the new wheel-pit and an illustration showing its location in relation to the present power house and wheel-pit.

75. DUNLAP, O. E. New work at Niagara Falls by the Hydraulic Company. (Elec. Eng. N. Y. July 28, 1898. 26: 73-75, illus.)

Fully describes the recent extension of the company's plant.

76. DUNLAP, O. E. Niagara Falls as an electrical center. (W. Elec. June 12, 1897. 20: 325-27, illus.)

Describes the manifold changes wrought and calls attention to the installations of special interest to electricians.

77. DUNLAP, O. E. (The) Niagara Falls Hydraulic Power and Manufacturing Company's new work. (Elec. Eng. Dec. 4, 1895. 20: 537-39, illus.)

A brief description of the new station and its machinery.

78. DUNLAP, O. E. Nikola Tesla at Niagara Falls. (W. Elec. Aug. 1, 1896. 19: 55.)

Account of Tesla's first visit to the plant of Niagara Falls Power Company, with his impressions.)

79. DUNLAP, O. E. Novel features of the Niagara Falls lighting plant. (W. Elec. Aug. 15, 1896. 19: 73-74, illus.)

A description of the unusual machines used in the station of the Niagara Falls Electric Light and Power Company.

80. DUNLAP, O. E. Power transmission from Niagara Falls. (Cassier, Jan. 1897. 11: 197-204.)

Electric power of Niagara used on the lines of the Buffalo Street Railway Company, the power being transmitted a distance of twenty miles.

81. DUNLAP, O. E. Transmission of Niagara power to Buffalo. (Elec. Eng. Oct. 28, 1896. 22: 413-15, illus.)

A description of the construction of this transmission line of unusual importance.

82. DUNLAP, O. E. (The) Use of Niagara power by the Buffalo General Electric Company. (Elec. Eng. N. Y. Jan. 5, 1899. 27: 17-22, illus.)

Valuable description of the new plant and its novel features of construction and apparatus. This is the most important application of electric power after a long transmission extant.

83. ELECTRIC power from Niagara Falls. (Elec. Rev. Nov. 20, 1896. 39: 673.)

A brief account of the formal receipt of electric power in Buffalo from Niagara Falls, November 16, 1896.

84. (The) ELECTRIC railways of the Niagara river region. (St. Ry. Jour. Oct. 1897. 13: 585-611, illus.)

A very full account of the way in which the Niagara electric railways are using Niagara Falls power.

85. (The) ELECTRICAL features of Niagara. (Elec. Wld. June 5, 1897. 29: 719-34, illus.)

A description of the Niagara Falls Power Company, the Power Transmission line, the Railway, Hydraulic Power and Manufacturing Company, the Carborundum Company, and other industries. The illustrations are above the average and the descriptions are full of the most valuable information.

86. (The) FALLS harnessed. (St. Ry. Rev. Oct. 1897. 7: 660-68, illus.)

Historical account of the two power companies at the Falls of Niagara, with many illustrations.

87. (The) FALLS of Niagara and its water-power. (Nature, Mar. 22, 1894. 49: 482-86, illus.)

A technical description of the works of the Niagara Falls Power Company.

88. FORBES, George. Harnessing Niagara. (Blackw. Sept. 1895. 158: 430-44.)

A very rambling article concerning the electrical utilization of Niagara, written by an Englishman who was electrical consulting engineer in the work.

89. FOSTER, Horatio A. Niagara power in Buffalo. (W. Elec. Jan. 8, 1898. 22: 26-27.)

States in a concise form what has been done up to date to place the power in condition for use, discussing also how the power will be distributed, the cost, and other pertinent questions.

90. (A) GREAT power house at Niagara. (Sci. Am. June 18, 1898. 78: 393-94, illus.)

A full and rather technical description of the recent developments of the water power of Niagara Falls.

91. HARTT, R. L. The new Niagara. (McClure, May, 1901. 17: 78-84.)

A glimpse into the future of the cities of Buffalo and Niagara Falls, as effected by electricity and other mechanical powers.

92. HASKIN, J. R. The electrical equipment of Mathieson Alkali Works. (Elec. Wld. Nov. 27, 1897. 30: 637-38, illus.)

Confined to a description of the electrical machinery of the latest addition to the plants surrounding the great power house of the Niagara Falls Power Company.

93. JOHNSON, W. C. The pulp mill of the Cliff Paper Company of Niagara Falls, N. Y. (Am. Soc. C. E. Aug. 1894. 32: 214-28, illus.)

Excellent charts, illustrations, and description of the general design and working of the plant of the Cliff Paper Company in connection with that of the wood pulp mill. This mill uses about 2500 horse power, getting its water supply through the Niagara tunnel.

94. KNIGHT, S. S. The new 2500 horse power turbines at Niagara. (Sci. Am. Dec. 10, 1898. 79: 373-74, illus.)

Describes a pair of Geyelin-Jonval horizontal axis turbines lately installed.

95. LESSONS from the Niagara power plant. (Eng. Rec. Jan. 14, 1899. 39: 147-48.)

Reviews the statement of Dr. Coleman Sellers, chief engineer of the Niagara Falls Power Company, concerning the changes considered necessary by experience in operating the plant.

96. LESUEUR, Ernest A. Commercial power development at Niagara. (Pop. Sci. Mo. Sept. 1894. 45: 608-30, illus.)

A technical description of the methods which the many commercial interests at Niagara use in utilizing the power from the Falls.

97. MARTIN, T. C. Niagara on tap. (Jour. Frankl. Inst. Oct. 1896. 142: 287-302 and 354-66, illus.)

Popular description and general remarks upon the utilization of the power of Niagara Falls by the conversion of the energy of its fall into electricity.

98. MARTIN, T. C. The utilization of Niagara. (Smithsonian Institution. Annual report, 1896. V. 51, pt. 1: 223-232, illus.)

A general survey of the engineering problems which have been solved in the great work of utilizing Niagara power.

99. MUNRO, J. Electricity from Niagara. (Liv. Age, May 27, 1893. 197: 567-71.)

A short history of electricity as a means of distributing Niagara Falls power.

100. (The) NEW water power development below Niagara Falls. (Eng. News, Mar. 26, 1896. 35: 201-2, illus.)

The head of water utilized is about 125 feet. Five illustrations showing the location, arrangement, and general appearance of the paper-mill plant are given.

101. NIAGARA as an industrial center. (Sci. Am. May 27, 1899. 80: 343-44, illus.)

A description of the topographical and engineering features of Niagara, the river, the fall, the gorge with its overarching bridges, and the scenic railways which line its crest and follow the shore line at its base, and above all the unprecedented hydraulic and electrical works by which the outflowing drainage of our great inland seas is being subjected to the service of a growing industrial city.

102. (The) NIAGARA-BUFFALO transmission. (Elec. Rev. Jan. 1, 1897. 40: 6-7.)

A report of the successful opening at Buffalo of the power transmission line between that city and Niagara Falls, together with a description of the power line.

103. (The) NIAGARA Falls electric power plant. (Sci. Am. Jan. 25, 1896. 74: 55, illus.)

A description of the power house with its water connections and electric plant. The illustrations show the relation of the surface canal, which takes water from the Niagara river above the falls, to the power house.

104. (The) NIAGARA Falls Hydraulic Power and Manufacturing Company's plant. (Eng. Rec. Jan. 20, 1900. 41: 53-56, illus.)

A full description of a plant in which the water is received through large penstocks running down the face of Niagara gorge; the last of these penstocks is 200 feet high, 11 feet in diameter, and entirely free from supports between its top and bottom.

105. NIAGARA Falls Hydraulic Power plant. (Sci. Am. Apr. 4, 1896. 74: 215, illus.)

A description of the turbine water wheels, which are 200 feet under the surface of the earth near the inner end of the tunnel.

106. NIAGARA Falls Power plant. (Elec. Wld. Feb. 6, 1892. 19: 85-86, illus.)

A brief description of the construction of the power plant for utilizing and distributing Niagara Falls power, together with the general plan of the power station.

107. NIAGARA power for the Buffalo railway system. (St. Ry. Jour. Dec. 1896. 12: 772-75, illus.)

A description of the methods by which Niagara power is supplied to the Buffalo railway system.

108. NIAGARA River development. (Sci. Am. Oct. 12, 1901. 85: 230.)

A brief account of the steps which have been taken preparatory to the development of power on the Canadian side at Niagara.

109. OVERBURY, Frederick. Electro-chemistry at Niagara Falls. (Cassier, 1897. 12: 227-30.)

An account of the work of the chemical construction company at Niagara Falls, which city has more factories making chemicals by electricity than any other city in the world.

110. PERKINS, Frank C. Niagara power transmission up to date. (Elec. Wld. Nov. 21, 1896. 28: 621-22.)

Good description of the electrical equipment for the Buffalo Street Railway.

111. POPE, F. L. The distribution of electric power at Niagara. (Eng. Mag. 1895. 10: 407-17.)

A valuable summary of the most important contributions made to the discussion of the commercial aspects of the problem of electrical transmission of power, with especial reference to the case of the Niagara plant.

112. POWER plant of the Niagara Falls Hydraulic Power and Manufacturing Company. (Power, Dec. 1895. 15: 17.)

A brief description of the power plant.

113. (The) POWER plant of the Niagara Falls Hydraulic Power and Manufacturing Company. (Elec. Wld. Jan. 14, 1899. 33: 43-46, illus.)

Describes the plant and the uses to which the power is applied.

114. PROJECTS for the utilization of Niagara. (Engn'g. Oct.-Nov. 1891. 52: 468-559-589.)

A rather long article which gives first a general description of the various systems offered for the utilization of a small part of the power running to waste at Niagara, and second, a more detailed account of some of the projects. This long discussion closes with the statement that the general opinion of the commission was in favor of the adoption of electricity as the chief, although perhaps not the only, means of distributing the power.

115. RANKINE, W. B. The accomplished utilization of Niagara. (Sci. Am. Sup. July, 1897. 44: 17945.)

As a concrete presentation of the facts, Mr. Rankine, Secretary of Niagara Power Company, in this article presents a list of contracts made for supplying power up to 1896.

116. RECENT additions in the power house of the Niagara Falls Hydraulic Power and Manufacturing Company. (Am. Elect'n, Dec. 1899. 11: 547-51, illus.)

A technical description of many special machines for the generation of direct currents for electro-chemical purposes from hydraulic power.

117. (A) SCHEME for the electrical utilization of Niagara. (Elec. Wld. Feb. 9, 1889. 13: 71-72, illus.)

Description of a plan which proposes to get in behind the Falls, and there erect vertical pipes that shall catch the water on the inner side of each fall and carry it downward to the turbines directly connected with lines of shafting in chambers excavated under the Falls.

In this unique plan, Mr. Hamilton, the originator, seeks to avoid the construction of expensive long tunnels proposed by some, as well as the other schemes that would spoil the view by planting ugly machinery immediately in front of the Falls.

118. SCHEUFELEN, A. The Niagara Falls Hydraulic Power and Manufacturing Company. (Zeitschr. d. Ver. Deutscher Ing. Mar. 17, 1900. 44, pt. 1: 346-49.)

A well illustrated description of the canal and the power house below the Falls, with remarks on the industries to which the power is applied.

119. SCOTT, C. F. The extension of the Niagara power plant. (Philadelphia Engineers' Club. Transactions, 1897.)

Interesting information about the practical performance of the plant during the past two years of its operation, as well as the extension of capacity now being made.

120. SCOTT, C. F. The installation of the Niagara Falls Power Company. (Pro. Engs. Club of Phil. Apr. 1897. 14: 127-50, illus.)

Shows something of the means which have been taken, within the last few years, for the utilization of this power and explains the most interesting features.

121. SELLERS, Coleman. How Niagara's power will be utilized. (Eng. Mag. Sept. 1891. 1: 802-17.)

The actual work that is now going on at Niagara consists in the driving of the horseshoe-formed tunnel, the completion of which is to render all after work possible. When this tunnel is finished and an entrance made from the river by the completion of some portion of the canal that is to feed the mill sites, power can at once be supplied in a large degree to the various industries.

122. SELLERS, Coleman. The utilization of the power of Niagara Falls. (J. Frankl. Inst. July, 1891. 132: 30-53.)

A history of the work which has been done at Niagara in order to accomplish the utilization of the great amount of water power there. The account is of a popular and interesting nature.

123. SYSTEM of the International Traction Company of Buffalo, N. Y. (St. Ry. Rev. Dec. 15, 1899. 9: 815-22, illus.)

Excellent description of the interurban lines, the Niagara Falls power equipment, stations, and welded rail joints.

124. (The) TRANSFORMATION of Niagara power into three-wire direct current by the Buffalo General Electric Company. (Am. Elect'n. Feb. 1900. 12: 59-67, illus.)

Very fine illustrations with complete description of circuits and explanations of unusual alternating current phenomena involved.

125. TRANSMISSION of power from Niagara Falls to Buffalo completed. (Pub. Opin. Dec. 1896. 21: 723.)

A brief and popular description of the means by which power is transmitted from Niagara Falls to Buffalo.

126. TROWBRIDGE, John. Niagara the motor for the World's Fair. (Chaut. Jan. 1892. 14: 441-45.)

A glance at previous methods of transmitting power by electricity over long distances, and the plan by which a German electrician proposed to transmit 5,000 horse power from the Falls of Niagara to the World's Fair at Chicago.

127. TUTTLE, W. E. Electricity at Niagara Falls. (Elec. Wld. Mar. 7, 1896. 27: 256.)

A description of the plant, in process of construction, of the Niagara Falls Hydraulic Power and Manufacturing Company, which it is thought will produce the cheapest power for the money invested of any in this country.

128. (The) UTILIZATION of Niagara. No. 1. (Engn'g. Sept. 26, 1890. 50: 355-58, illus.)

The Cataract Construction Company has been organized to carry out a scheme that is to take from the Falls about 120,000 horse power. Two plans are under consideration. One contemplates the development of a large tract of country by the establishment of water-driven

factories, the wheels for each mill or cluster of mills being erected in pits of suitable depth. The other plan suggests that the same thing can be accomplished by a concentration of the wheels at one point at one great central station, from which station the power may be carried to the mill sites near and far by one or more of the known methods of transmission.

129. (The) UTILIZATION of Niagara. No. 2. (Engn'g. Oct. 17, 1890. 50: 449-51, illus.)

A brief article on the geology and history of Niagara and a statement of the climatic, commercial, and financial interests — all in reference to the benefit to be derived from the utilization of Niagara power.

130. (The) UTILIZATION of Niagara. No. 3. (Engn'g. Oct. 24 1890. 50: 473-75, illus.)

An article setting forth the excellent commercial and domestic facilities of the Niagara region and giving several arguments for the utilization of the water power.

131. (The) UTILIZATION of Niagara. No. 4. (Engn'g. Oct. 31, 1890. 50: 505-506.)

A list of the data and specifications which were sent to the various firms and engineers who were asked to submit plans for the best method by which to utilize Niagara power. These specifications were sent to parties selected by the International Niagara Commission for their special ability.

132. (The) UTILIZATION of Niagara. No. 5. (Engn'g. Nov. 7, 1890. 50: 535.)

A comparison with the compressed air system used at Birmingham and Paris.

133. (The) UTILIZATION of Niagara. No. 6. (Engn'g. Nov. 14, 1890. 50: 536-66.)

A discussion of the great tunnel for carrying away the water used in creating power, as affected by the various atmospheric and geologic conditions.

134. (The) UTILIZATION of Niagara. No. 7. (Engn'g. Jan. 2 1891. 51: 19-21, illus.)

A short description of the scenic appearance of th e Falls

135. (The) UTILIZATION of Niagara. No. 8. (Engn'g. Feb. 27, 1891. 51: 235.)

Copies of letters from long residents at Niagara Falls concerning the changes which have taken place in the water level at different periods. The article ends with an account of the prizes and premiums awarded by the Commission to the engineers and engineering firms which had submitted designs of acknowledged merit.

136. (The) UTILIZATION of Niagara. (Engn'g. 1891. 52: 468-559-589.)

The Cataract Construction Company invited various firms to send in projects for the utilization of about 125,000 horse power at Niagara, and its distribution partly to an industrial district in the neighborhood of the Falls and partly to the city of Buffalo.

This series of articles describes the various plans suggested, and gives much valuable information concerning the solving of the problem stated.

137. UTILIZING Niagara Falls. (Elec. Wld. Aug. 10, 1889. 14: 88, illus.)

A short description of a plan proposed by the Niagara River Hydraulic Tunnel, Power and Sewer Company.

This company seeks to solve the problem by constructing a subterranean tunnel from the water level below the Falls, extending through the rock to the upper Niagara river at a point about one mile above the Falls, where a head of 120 feet is obtained.

138. UTILIZING the power of Niagara. (Nation, Aug. 8, 1889. 29: 104-5.)

A brief article setting forth three systems for accomplishing the utilization of wasted power at Niagara, and arguing that the practical difficulty does not consist in any want of devices or difficulty of invention, but in the immense cost of the best device that could be conceived.

139. WATTS, H. F. The Hamilton plan for utilizing Niagara. (Elec. Wld. Mar. 2, 1889. 13: 133-34.)

A criticism of Mr. Hamilton's plan, together with suggestions for the improvement of its electrical points.

140. WEEKS, Arthur B. Recent developments at the Niagara Falls power plant. (Sci. Am. Apr. 13, 1901. 84: 229, illus.)

A rather technical description of the most important mechanical devices in use at the Niagara Falls power plant.

141. WHITE, J. G. The electric power transmission line between Niagara Falls and Buffalo. (St. Ry. Jour. July, 1897. 13: 425-27.)

An interesting and popular account of the construction of this famous power transmission line.

142. WHITE, J. G. The Niagara Power Transmission line. (Elec. Eng. June 16, 1897. 23: 674-76.)

History and description.

143. WOOD, De Volsen. A turbine of the Niagara Power Company. (Am. Mach. Jan. 23, 1896. 19: 106-7, illus.)

Results of calculations of the performance of a large turbine of the Fourneyron type, based upon data supplied by Professor Coleman Sellers.

144. WOODBRIDGE, J. E. The development and extension of the Niagara power system up to date. (Am. Elect'n. Jan. 1900. 12: 1-20, illus.)

Replete with valuable illustrations and information on the most advanced developments of polyphase work.

145. THE work of the Tonawanda Power Company. (Am. Elect'n. Apr. 1900. 12: 155-62, illus.)

Describes the transforming of Niagara power for motors, converting it for railway use, and regenerating it for arc and incandescent lighting.

POETRY AND FICTION.

146. HOWELLS, W. D. Niagara revisited, twelve years after their wedding journey. (Atlan. May, 1883. 51: 598-610.)

An interesting and amusing story of a second visit to Niagara.

147. HOWELLS, W. D. Their wedding journey. 1895. (Bost. Houghton, p. 119-71.)

A chapter on Niagara with various impressions it makes upon the visitor.

148. LONGFELLOW, H. W. Niagara. (Longfellow. Poems and places. 28: 152-69.)

Poems about Niagara Falls and river.

149. RICHARDS, W. C. Niagara in spring. (Harper. Sept. 1865. 31: 428.)

A poem.

150. SHOOTING Niagara Falls. (Ecl. M. Jan. 1883. 100: 122-27.)

A short story of a visit to Niagara.

151. WARNER, C. D. Their pilgrimage. 1896. (N. Y. Harper, 297-315.)

An interesting picture of a short visit to Niagara.

"Ephemeral Bibelots."

A Bibliography of the Modern Chap-Books and their Imitators, Including the Short-Story Magazines, from their First Issue to May, 1903.

By FREDERICK WINTHROP FAXON.

PART II.

EXPLANATION: Size is given in inches, length first then width. A ‖ means ceased publication, a + indicates still issued. Therefore in titles followed by neither of the above signs the final date given may not be the end of publication. The mottoes and descriptive sub-titles are in all cases taken from the periodicals themselves.

Four O'clock. A monthly magazine of original writings. Sincerity, beauty, ease, cleverness. Chicago.
Monthly, illustrated, 11 x 6¾. No. 1, Feb., 1897 — no. 71, Dec., 1902.‖
NOTE.— Merged in "Philarmonic," Chicago.

Freak, The. A monthly magazine. The youngest editor in America. Sharon, Mass.
Monthly, illustrated, 7 x 5¼ (cover 7 x 6½). Vol. 1, no. 1, Jan. 21, 1902 — vol. 2, no. 3, March (cover date April), 1903.+
NOTE.—At first typewritten, with a circulation of three copies, one of which is on file at the Sharon Public Library. First printed number was vol. 1, no. 9, Sept., 1902.

Future, The. A few pages of bizarre bookishness, published now and then when the spirit moves. Taunton, Mass.
Monthly, 5⅜ x 4½ and 6½ x 4½. Vol. 1, no. 1 (?), 1899 — vol. 2, no. 4, July, 1900.‖
This was continued as "The Bohemian," Boston.

Gauntlet, The. A magazine for the honest. Chicago.
Monthly, 7 x 5. Vol. 1, no. 1, March, 1903.+

Gems of American Patriotism. Washington, D. C.
Quarterly, 6 x 4¼. Vol. 1, no. 1, April, 1898 — vol. 1, no. 3, Oct., 1898.‖

Ghourki, The. Face to the front and keep going. Morgantown, W. Va.
Monthly, 8 x 4¼. Vol. 1, no. 1, July (?), 1901 — vol. 2, no. 6, Jan., 1903.+
NOTE.— Several months behind in publication.

Good Cheer. A monthly magazine for cheerful thinkers. Boston.
Monthly, 6½ x 4¾. Vol. 1, no. 1, Nov., 1900 — vol. 2, no. 3, July, 1901.‖

Goose Quill, The. An Anglo-American magazine. Chicago.
Monthly, illustrated, 8 x 5¾. No. 1, Feb., 1900 — no. 3, April, 1900.‖
Bi-monthly, illustrated, 8 x 5½, new series. Vol. 1, no. 1, Nov. 1, 1901 — vol. 2, no. 5, Feb., 1903.+

Grasshopper, The. Newport, R. I.
Semi-monthly, illustrated, 8 x 5 and 7 x 4. Vol. 1, no. 1, May 15, 1897 — vol. 2, no. 10, Sept., 1898.‖

Gray Goose, The. A monthly magazine of original short stories. Cincinnati and Franklin, O.
Monthly, 9 x 5¾. Vol. 2, no. 5, May, 1897 — vol. 11, no. 6, June, 1903.+
NOTE.—Until vol. 2, no. 5, called "American Home Magazine."

Great Round World, The, and what is going on in it. New York.
Weekly, illustrated, 7 x 5 and 9½ x 6½. Vol. 1, no. 1, Nov. 12, 1896 — vol. 21, no. 340, May 16, 1903.
NOTE.—Name to be changed with issue of July 4, 1903.

Handicraft. Boston.
Monthly, illustrated, 6¾ x 4¼. Vol. 1, no. 1, April, 1902 — vol. 2, no. 2, May, 1903.+

Hart's Yarns. A monthly magazine for you. New York.
Monthly, 7½ x 5½ to 6½ x 3½ [vol. 1, no. 1] Nov., 1901 — vol. 2, no. 4, Aug. 1902.‖

Hatchet, The. A little journal of literature, edited at odd spells and published at Leavenworth, Kas.
Illustrated, 8¼ x 5½, vol. 4, no. 1, Nov., 1896.— [8th no.] June, 1897.‖
NOTE.— Vols. 1-3 issued as a paper by the High School students.

Higher Law, The. A monthly periodical of advanced ideals. Boston.
Monthly, 8 x 5¼. Vol. 1, no. 1. Dec., 1899 — vol. 6, nos. 1-2, Aug.-Sept., 1902.‖
NOTE.— Merged in "Country Time and Tide."

Hobby, The. An illustrated magazine of entertaining polite literature. Baltimore, Md.
Quarterly, 9⅜ x 6¾. Vol. 1, no. 1, Autumn, 1902 — vol. 1, no. 2, Winter, 1902-3.+

Home Craft. Published every new moon or thereabouts. Chicago.
Monthly, illustrated, 8 x 6. Vol. 1, no. 1, Nov. (?), 1899— vol. 2, no. 6, Oct., 1900.

Homo. A periodical for men, and the women who look over their shoulders. Beverly, N. J.
Monthly, 7½ x 5½. Vol. 1, no. 1, June, 1901—vol. 3, no. 5, Oct., 1902.+
NOTE.— Several months behind in issue.

Honey Jar, The. A receptacle for literary preserves. Columbus, O.
Monthly, illustrated, 7 x 5. Vol. 1, no. 1 [Nov.], 1898— vol. 4, no. 6, Oct. 15, 1900.‖

Hoppergrass, The. Published monthly by the little Bryces. Ashland and Richmond, Va.
Monthly, illustrated, 9¼ x 6¼. Vol. 1, no. 1, Jan., 1899— vol. 4, no. 12, Dec., 1902.+

Horn Book, The, of periodical literature. New York.
Bi-monthly, 7¼ x 6½. Vol. 1, no. 1, Aug., 1895.‖

Hour Book, The. Cumberland, Md.
Monthly, illustrated, 9¼ x 7. Vol. 1, no. 1, Oct., 1895— vol. 1, no. 8, May, 1896.‖

Idol, The. A monthly magazine of bright short stories. San Francisco.
Monthly, 9 x 6. Vol. 1, no. 1, June, 1901.

Impressionist, The. A magazine of originality. New York.
Monthly, illustrated, 11⅛ x 9⅛ and 10¼ x 7¼. Vol. 1, no. 1, Nov., 1899—vol. 1, no. 12, Oct., 1900.‖

Impressionist, The. A periodical of soliloquies for the sophisticated, as sparkling as champagne, as harmless as soda. St. Louis.
Monthly, 6¼ x 5. Vol. 1, no. 1, July, 1902 — vol. 2, no. 1, Jan., 1903.+

Impressions. Quarterly. San Francisco.
Quarterly, illustrated, 10¼ x 7¼. No. 7 (vol. 1), Sept., 1900 — no. 1, vol. 4, March, 1903.+
First six numbers called "Personal Impressions."

In Lantern Land. Hartford, Conn.
Monthly, 11 x 8, vol. 1, no. 1, Dec. 3, 1898 — vol. 1, no. 6, May 6, 1899.‖

In Many Keys. A little magazine made up entirely of the writings of Douglas Mallock. Muskegon, Mich.
Every six weeks, 5 x 3¼. Vol. 1, no. 1, March, 1900— vol. 4, no. 1, March, 1902.‖

Ishmaelite, The. Indianapolis, Ind.
Monthly, 6½ x 5¼. Vol. 1, no. 1, Dec., 1896 — vol. 5, no. 6, May, 1899.‖

(To be continued.)

BERMUDA IN PERIODICAL LITERATURE; WITH OCCASIONAL REFERENCES TO OTHER WORKS.

SERIES II., PART XII.

A BIBLIOGRAPHY.

By George Watson Cole.

Royal Society. Proceedings. London. 8°.

MOSELEY, Henry Nottridge. Preliminary Report, on the True Corals dredged by H. M. S. 'Challenger' in deep water between the dates Dec. 30th, 1870, and August 31st, 1875. Vol. 24 (no. 170, 1876), p. 544–569. 1 *woodcut.*

NOTE.—"Published by permission of the Lords of the Admiralty. Received February 14, 1876. Read March 16." Among the species dredged in depths of 50 fathoms and upwards, near Bermuda, were the following:—*Caryophyllia formosa* Pourt., 4th April, 1873, east of Bermuda, in 435 fathoms, p. 545; *Deltocyanthus Agassizii* Pourt., 19th April, 1873, off Bermuda, in 200 fathoms—(in the sounding-machine), 29th May, 1873, off the Bermudas, in 1075 fathoms, pp. 546, 551; *Madracis Hellana* Valenciennes in M.-Edw. & H., 4th April, 1873, east of Bermuda, in 435 fathoms, p. 547; *Cladocora arbuscula* M.-Edw. & H., 4th of April, 1873, east of Bermuda, in 435 fathoms, p. 548; *Fungia symmetrica* Pourt., 22d April, 1873, southwest bank, off Bermudas, 30 fathoms—29th May, 1873, southwest of Bermudas, in 1075 fathoms, pp. 562–563. In a list of corals dredged from less than 50 fathoms, but of especial interest, is one from Bermudas; *Madracis asperula* M.-Edw. & H., 22d April, 1873, southwest bank, off Bermudas, in 30 fathoms, pp. 549, 563.

WILLEMÖES-SUHM, Rudolf von. Preliminary Report, on Observations made during the Earlier Part of the Voyage of H. M. S. 'Challenger.' Vol. 24 (1876), p. 569–585.

NOTE.—"Published by permission of the Lords of the Admiralty. Received February 14, 1876. Read March 16." The report on "The Islands of the Atlantic" fills pp. 580–584. "Numerous excursions were made in Bermudas, partly inland, when I tried to catch as many insects as possible on the beach, where the shallow-water animals were secured by wading. Hungary Bay was my chief place of resort. Here the forest approaches the beach, and afforded opportunities for collecting of all kinds. There mangrove-trees were growing in large swamps, crowded with a *Grapsus* which ascended these trees; and under the stones which covered the muddy ground I found plenty of land-crabs belonging to different genera of the Telphusidæ. When looking for these I discovered a land-Nemertean, being the first one found in the western hemisphere (the only animal of this kind having been found by Semper in the Philippines). This species was described and figured in the 'Annals and Magazine of Natural History' for 1874 (xiii, p. 409), under the name *Tetrastemma agricola*."

"In Bermudas we also made frequent excursions in the steam-launch, which enabled me to get specimens of a *Nebalia* which I had noticed before among Crustacea collected by Mr. Murray. This species (*N. longipes*), which I have worked out and described in the 'Transactions of the Linnean Society,' is remarkable in many ways, as its legs are far less 'phyllapodal' than in the other species known before, and, as in the male of this American *Nebalia*, it is the first and not the second antenna (*N. Geoffroyi*) which has been enlarged and transformed into a prehensile organ."—p. 580.

Royal United Service Institution. Journal. London. 8°.

DAVIS, *Captain* J. E. Extract from a Paper read at the "British Association for the Advancement of Science," at Bradford, on "The Scientific Voyage of the Challenger." Vol. 17 (no. 75, 1873), p. 828–835.

NOTE.—This extract gives an account of the *Challenger's* cruise up to the time she reached the Cape Verde Islands. Referring to Bermuda the author says:—"The several deep soundings taken around Bermuda prove it to be a peak on which the coral animals have built the islands; and from the fact of there being considerable magnetic disturbance at different stations on the islands, it may be inferred that, unlike the coral formations of the Pacific, there has been no subsidence of the mountain. There are two or three other peaks similar to that of Bermuda, for instance the Sainthill and Milne banks, one with 100 fathoms, the other with 80 fathoms on it. These are well authenticated soundings, and had the peaks been a few fathoms nearer the surface, doubtless we should have had two islands similar to Bermuda."—pp. 832, 833.

Rymer, Thomas. Fœdera, Literæ, et Cujufcunque Generis Acta Publica, inter Reges Angliæ, Et Alios quofvis Imperatores, etc. Londini. folio.

JAMES I. A Proclamation for the utter Prohibiting the Importation and Ufe of all Tobacco which is not of the Growth of the Collonyes of Virginia and the Sommer Iflands or one of them. Tomus XVII, Editio secunda (1727), p. 668–672.

NOTE.—A marginal note reads as follows:—"A. D. 1625. Pat. 22. J. 1. p. 4. n. 2." The proclamation closes thus: "Witnes our felfe at *Theobalds* the fecond Day of Marche. *Per ipfum Regem.*"—p. 672.

St. James' Magazine and United Empire Review. London. 8°.

VISITOR, A. Bermuda. Second series, vol. 11, whole no. vol. 32 (no. 6, December, 1873), p. 692–700 *and* vol. 12, whole no. vol. 33 (no. 1, January, 1874), p. 20–28.

NOTE.—A general historical and descriptive sketch of the islands. Among other topics noted are the visit and reception of Prince Alfred, May, 1861; yellow fever epidemics; migratory and native birds; hurricanes, waterspouts, and the aurora borealis; water and water-tanks; geology; and the marine railway built at St. George's in 1864. A reference to the disadvantages of certain articles of feminine apparel, much in fashion at the time the article was written, is tersely made in the following extract:—"At a certain picnic, however, a certain young lady who was determined to explore all the mysteries of the cavern (Walsingham), overcame difficulties by leaving her crinoline on a tree outside, and after she had paid her visit, she resumed 'the cage.'"—p. 25.

RESIDENT, A. The Bermudas. Vol. 37; whole no. vol. 46 (no. 5, May, 1880), p. 385–392.

NOTE.—The writer was ordered to Bermuda, and was so pleased with the islands that he left them with regret. Besides the usual topics he writes of Bermuda as a military station and of military life as carried on there.

St. Nicholas. New York. 8°.

SAWYER, Philip Brett. An Anglo-American alliance. Vol. 29 (no. 4, February, 1902), p. 291–298. 4 *illustrations.*

NOTE.—A story of the adventures of two American boys in Bermuda. Robert and Christopher Belcher bribe Gunner Pouting to take them into Fort St. Catherine. The gunner is discovered and arrested, but the boys escape. They are taken to the Governor-General's, by their uncle, the next morning, and at their request the gunner is pardoned.

BRISTOL, Charles Lawrence. The Castle Garden Aquarium. Vol. 29 (no. 8, June, 1902), p. 680–684. 8 *illustrations.*

NOTE.—Professor Bristol describes many of the brilliantly colored fish of the Bermudas, all of which and many more may be seen at the Aquarium in Battery Park.

Sanitarian, The. A monthly journal. New York. 8°.

BERMUDAS, The. *Anon.* Vol. 1 ([no. 9], December, 1873), p. 393–401.

NOTE.—Gives the location of the islands and tells how they may be reached; with notes upon their temperature, healthfulness, vegetation, and products; towns, hotels, and recreations.

"BERMUDA in winter—a Word to Invalids." *Anon.* Vol. 2 ([no. 3], June, 1874), p. 113–115.

NOTE.—This is a reply to an article, with the above title, which appeared in *The Sower and Gospel Field*, calling in question the correctness of the statements made in the article in the *Sanitarian* for December, 1873.

Science. A weekly journal devoted to the advancement of science. New York. 8°.

BUSH, Katharine J. "Synopsis of the Recent and Tertiary Septonacea of North America and the West Indies. . . . . By William H. Dall, *etc.* [a review]. New series, vol. 10 (no. 243, August 25, 1899), p. 249-251.

NOTE.— Speaking of the *Lasæa rubra* Montagne, quoted by Dall, from Bermuda, the reviewer says it was found there abundantly by Professor Verrill and his party in 1898. A comparison with specimens from Guernsey convinces Miss Brush that the Bermuda specimen is a distinct species to which she assigns the name *Lasæa Bermudensis*, sp. nov.

WAITE, F. C. Bufo Agua in the Bermudas. New series, vol. 13 (no. 322, March 1, 1901), p. 342-343.

NOTE.— Also issued separately (4 pp.). This is the only amphibian (*Bufo agua* Daudin) in the islands. It was introduced, about 1885, by Captain Nathaniel Vesey of Devonshire parish, with a view to using this toad to catch garden insects. About two dozen were imported from Demerara; they were let loose and thrived from the first. HEILPRIN'S *Bermudas* (1889), p. 84, reported a few in swamps. It is now common throughout the islands. "*Bufo agua* is the largest living Anuran known. The largest specimen I have seen from Bermuda was collected by the New York University Expedition of 1898, and is now in the Zoological Museum at Columbia University. It measures 155 mm. (6 1-8 inches) from snout to vent, and weighs 960 gm. after having been two years in a four per cent solution of formalin."— p. 342.

BRISTOL, Charles Lawrence. On the Color-patterns of Certain Bermuda Fishes. New series, vol. 17 (no. 430, March 27, 1903), p. 492.

NOTE.— A brief abstract of a paper presented at the meeting of the American Morphological Society, held at Washington December, 1902. The same paper was subsequently presented at the March meeting of the New York Academy of Sciences (*Science*, no. 431, April 3, 1903, p. 545). The paper embodies the results of six seasons' observations while the writer was collecting living fishes for the New York Aquarium, and "deals with correlations between habits and appearance with reference to warning and protective coloration of these fishes."

MAYER, A. G. A Tropical Marine Laboratory for research. New series, vol. 17 (no. 434, April 24, 1903), p. 655-660.

NOTE.— The writer in a previous number of this periodical (no. 424, February 13, 1903, p. 246) advocated the Tortugas as a suitable place for a biological station in preference to the West Indies, the Bahamas, and Bermudas on the ground of the purity of the water and the richness of its fauna. In this article are presented letters from various scientists, giving the locations which they prefer. Of sixteen, "seven favored localities other than the Tortugas. Four of these preferred the Antilles (Jamaica, being specified by two), two the Gulf coast of the United States, and one (Professor A. E. Verrill) the Bermudas. All of the seven have been upon expeditions to the tropical Atlantic."— p. 656. Professor Verrill prefers Bermuda because of his familiarity with that locality. He adds: "Perhaps the social conditions, also, are superior in Bermuda. There would be no lack of materials in either place, and a biological station in either place would be of great value to the progress of science."— p. 659.

BIOLOGICAL STATION at Bermuda, A. New series, vol. 17 (no. 435, May 1, 1903), p. 714, 715.

NOTE.— The Bermuda Natural History Society in connection with Professor Edward Laurens Mark of the Harvard University Zoological Laboratory and Professor Charles Lawrence Bristol of New York University here announce the very favorable arrangements which have been made for the summer's work in botany and zoology. The Natural History Society has undertaken to provide "the necessary facilities for collecting, namely: a steam launch thirty to forty feet long with crew; a sail boat with fish-well and crew; three rowing boats, and a carriage with two horses capable of carrying ten or twelve persons. The well-known richness of the sub-tropical fauna and flora, the healthfulness and equable temperature of the islands, and the ease with which they may be reached combine to make the Bermudas a most attractive field for biological research."

Scientific American. An Illustrated Journal of Art, Science, and Mechanics. New York. folio.

GREAT FLOATING DOCK for Bermuda. Vol. 20 (no. 1, January 1, 1869), p. 7.

NOTE.— Nearly a column, extracted from the *London Scientific Review*.

VOYAGE of the Floating Dock to Bermuda. Vol. 22 (no. 5, January 29, 1870), p. 75.

NOTE.— This article, of over a column in length, was extracted from the London *Artizan*.

STEPSTONE, H. J. The New Bermuda Floating Dock. Vol. 86 (no. 14, April 5, 1903), p. 237-238. 1 *illustration*.

NOTE.— This new floating dock, built to replace the famous old structure at Bermuda, claims the distinction of being the longest and heaviest dock thus far constructed. It was launched on the Tyne February 8, 1903. "The following are the principal dimensions of the dock: Length over all 545 feet. Breadth over all 126 feet 2 inches. Length of end pontoons 120 feet. Length of middle pontoon 300 feet. Breadth between walls 100 feet. Width of pontoons 96 feet. Height of vertical walls 53 feet 3 inches. Length of vertical walls 435 feet. Thickness of walls 13 feet 1 inch. Lifting power up to deck level 15,500 tons. Extreme lifting power 17,500 tons. Total weight of hull 6,500 tons. Although larger in size its extreme lifting power is not equal to that of the famous Algiers dock. This latter will raise a weight of 18,000 tons up to pontoon level, and by utilizing the pound its power can be increased to 20,000 tons, making it the most powerful dock in the world. The new dock was successfully towed across the Atlantic, and was moored at the dockyard on the day of King Edward's Coronation, August 9, 1902.

Scotch Naturalist, The: a Magazine of Natural History. Edinburgh and London. 8°.

HAY, *Colonel* H. M. Drummond-. On Migration. Vol. 4 (1877-1878), p. 85-89, 133-144, 229-241, 283-292.

NOTE.— On pages 87 and 88 the writer gives his own observations, as well as those of others (Jones and Strafford) upon the appearance of the Greenland whale, *Balæna mysticetus*, near the Bermudas in the last week of February or the beginning of March.

On pages 231-240 are given the observations of several ornithologists regarding the migration of birds which have been noted at the Bermudas. A diagram is given to illustrate a very remarkable occurrence which took place October 9, 1849, when many species of birds were driven upon the islands by a storm. The observations are given in the words of Mr. Hurdis.

Scottish Geographical Magazine, The. Edinburgh. 8°.

BERMUDAS, The. Vol. 13 (no. 7, July, 1897), p. 374-376.

NOTE.— A summary of Professor J. J. Stevenson's paper on the Geology of Bermuda. "This group, called also the Somers Archipelago, has been investigated by many geologists and others, especially by Sir Wyville Thomson and Professors Rice, Heilprin, and Agassiz, who have expressed very different opinions regarding the geological changes it has undergone. Being puzzled by their want of agreement, Professor J. J. Stevenson visited the islands to form his own conclusions, which he has made known in the *Trans. of the* NEW YORK ACADEMY OF SCIENCES, vol. xvi."— p. 374.

This magazine contains other notices and information relating to the Bermudas:— Notice of *Lady* BRASSEY'S *In the Tropics*, etc., and "how she saw all the sights of Bermuda from Walsingham Cave to Massa Bertram's collection of Bermudian curiosities;" vol. 1, p. 75.— Notice of WALLACE'S *Lecture; Island Life;* March, 1886; vol. 2, p. 182-183.— "The Imperial Post-Office has issued an invitation for tenders for laying, maintaining, and working a telegraph cable between Halifax (Nova Scotia) and Bermuda in return for a subsidy to be granted by the Imperial Government;" vol. 4, p. 337.— Notice of HEILPRIN'S *Bermuda Islands;* vol. 7, p. 342.— LEFROY'S *Map*. A wall map in four sheets; vol. 7, p. 610.— Bermuda ocean currents according to the Prince of Monaco's map; vol. 8, p. 267.— MARKMAN'S paper on the *Limits between Geology and Physical Geography;* vol. 9, p. 633-639.— Bermuda as a coaling station; vol. 10, p. 236.— Telegraph to Bermuda; vol. 10, p. 238.— Bermuda soil; vol. 10, p. 488.— Notice of Margaret Newton's book; vol. 13, p. 553.

To be continued.

BIRTHS AND DEATHS.

A RECORD OF NEW TITLES, CHANGED TITLES AND DEATHS IN THE PERIODICAL WORLD.

(*To be continued quarterly.*)

N. B. — The editor will be glad to know of any omission or corrections, since January, 1900, not noted, for inclusion in the next issue, and will esteem it a favor to be notified of new periodicals by any librarian who may receive a sample number. Reports of deaths will be gratefully received and recorded.

I. New Periodicals.

ARCHITECTURAL INDEX. 729 Sixth Ave., New York, N. Y., mo., 8vo, vol. 1, no. 1, Jan., 1903. 10c., $1.00.

BIBLE EXPOSITOR. College Mound, Mo., mo., 8vo, vol. 1, no. 1, Jan., 1903. 25c.

BULLETIN SANITAIRE. 76 Rue St. Gabriel, Montreal, P. Q., mo., 12 mo, vol. 1, no. 1, Jan., 1901. Gratis.

BURLINGTON MAGAZINE, THE. The Savile Pub'g Co., Ltd., 14 New Burlington St., London, W., mo., 4to, illus., vol. 1, no. 1, Mar., 1903. $1.00, $10.80.

BURR MCINTOSH MONTHLY. 20 W. 33d St., New York, N. Y., mo., narrow 4to, illus., vol. 1, no. 1, Apr., 1903. 25c., $3.00.

COLBY COLLEGE BULLETIN. Waterville, Me., quar., 8vo, illus., vol. 1, no. 1, Mar., 1901.

COUNSELLOR, THE. 140 Nassau St., New York, N. Y., quar., 4to, illus., vol. 1, no. 1, Jan., 1903. $1.00.

"EXCELSIOR," Calais, Me., mo., 4to, vol. 1, no. 1, Apr., 1903. 5c. each.

FAITHFUL FRIEND. 71 E. 100th St., New York, N. Y., mo., 8vo, vol. 1, no. 1, Jan., 1903. $1.00.

FREAK, THE. Sharon, Mass., mo., 16 mo., illus., vol. 1, no. 1, Jan. 21, 1902. 5c. (First nos. typewritten.)

GINSENG NEWS. Cane Valley, Ky., quar., 8vo, vol. 1, no. 1, Mar., 1903. 20c. year.

GUIDE POST, THE. 308 S. 3d St., Minneapolis, Minn., mo., 8vo, illus., vol. 1, no. 1, Feb., 1902. 50c. year.

HARVARD ENGINEERING JOURNAL. Cambridge, Mass., 4 times in college year, 8vo, illus., vol. 1, no. 1, Apr., 1902. 35c., $1.00.

HOME LEAVES. 804 Penn. Ave., Pittsburg, Pa., mo., fol., illus., vol. 1, no. 1, May, 1900. 5c., 25c.

HOME MAKER, THE. 416 Mack Block, Denver, Colo., mo., 8vo, vol. 1, no. 1, Feb., 1903. 10c., $1.00.

"ILLUSTRATED NAVY, THE." 13 Astor Pl., New York, N. Y., mo., 8vo, illus., vol. 1, no. 1, May, 1903, 25c. each.

KNOCKER, THE. Blair, Neb., vol. 1, no. 1, Jan., 1902. (Correction of Jan. no.)

LABOR AND CAPITAL. 13 Astor Pl., New York, N. Y., mo., 8vo, vol. 1, no. 1, Apr., 1903.

LEEPER LESSON LIGHTS. 200 S. Clinton St., Chicago, Ill., quar., oblong 8vo, illus., vol. 1, no. 1, Jan.-Mar., 1903. 60c. year.

MONTHLY MAROON, THE. University of Chicago, Chicago, Ill., mo., 8vo, vol. 1, no. 1, Nov., 1902. 20c., $1.75.

NATIONAL ECLECTIC MEDICAL JOURNAL, THE. 2300 University St., St. Louis, Mo., mo., 4to, illus., vol. 1, no. 1, May, 1903. $1.00 year.

OUTPOST, THE. 614 Wyandotte St., Kansas City, Mo., mo., 8vo, illus., vol. 1, no. 1, Mar., 1903. 7c. 75c.

PRO CINGULO VERITAS. Concord, Mass., quar., 16mo., illus., vol. 1, no. 1, Apr., 1903. $1.00 year. (Bibelot.)

PROVIDENCE ATHENÆUM QUARTERLY BULLETIN. Providence, R. I., quar., 8vo, vol. 1, no. 1, Jan., 1903.

PROVIDENCE PUBLIC LIBRARY QUARTERLY BULLETIN. Providence, R. I., quar., 8vo, vol. 1, no. 1, Jan.-Apr., 1903.

PYROGRAPHIC ART MAGAZINE. 28 E. 20th St., New York, N. Y., mo., 8vo, illus., vol. 1, no. 1, May, 1903. $2.00 year.

ROCKY MOUNTAIN MAGAZINE, THE. 1634 Tremont St., Denver, Colo., mo., 4to., illus., vol. 1, no. 1, Mar., 1903. 2c., 10c.

STENOGRAPHER, THE. 116 N. 21st St., Birmingham, Ala., mo., fol., illus., vol. 1, no. 1, May, 1903. $1.00 year.

WILMINGTON INSTITUTE FREE LIBRARY, BULLETIN. Wilmington, Del., mo., 8vo, vol. 1, no. 1, Mar., 1903.

II. Changed or Discontinued.

ADVERTISING EXPERIENCE. Discontinued with vol. 16, no. 2, Dec., 1902. Merged in Judicious Advertising.

AGE OF STEEL, THE. St. Louis. Combined with Iron and Steel, Chicago, and called The Iron and Machinery World, Dec. 13, 1902.

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